USCGC HEALY (WAGB 20)

Preliminary Cruise Planning Questionnaire

SBI SPRING CRUISE 2002: HLY-02-01
(Cruise Plan: one word document, plus 8 attachment files)
Chief Scientist: Jackie M. Grebmeier

Date Last Modified: **17 JAN 02**

Please complete these cruise planning forms and send as an email attachment to mailto:marinescience@healy.uscg.mil. These forms are MS Word documents formatted as tables. You can tab through the cells and fill in text where appropriate. If you need more space refer to additional pages on the form and create new pages with your information.

Chief Scientist:	**Jackie M. Grebmeier**	Cruise Dates	**6 May-15 June 2002 (HLY-02-01)**
Institution:	**University of Tennessee**	Phone Number	**865-974-2592**
Address:	**10515 Research Dr. Suite 100, Bldg. A, Knoxville, TN**		
Email Address:	**jgrebmei@utk.edu**	Fax Number	**865-974-7896**

Date and Time to Start Loading	**1-20 April 2002**	Estimated Time Needed?	**Port: 2 days**
Special Requirements for Loading or in port logistics?	**PIs for 11 research projects will send cargo to USCG in Seattle via coordination by SBI Logistics Manager (Andy Heiberg/UW)**		

Note: HEALY will normally carry out multiple science missions each year. Any equipment not loaded prior to the ship departing Seattle for the start of the first mission should normally be small enough (size and weight) so that HEALY's helicopters or small boats can transport it from the science party embarkation port(s) to the

Give a brief description of the area of operations and type of work to be done: **HLY-02-01**

The SBI project focuses on shelf, shelf break and upper slope water mass and ecosystem modifications, material fluxes and biogeochemical cycles on the outer shelf and slope of Chukchi and Beaufort seas. This is the region where it is believed that key processes control water mass exchange and biogeochemical cycles, and where the greatest responses to climate changer are expected to occur. The cruise will initiate in Nome, Alaska, sail through Bering Strait and transit NW along the international dateline to the 100 m isobath of NW Chukchi Sea. We will then work our way eastward via the outer shelf and slope to the Beaufort Sea NE of Barrow, Alaska. During the initial transit to Herald Valley we have 3 shelf stations, with the focus of the SBI work along 4 outer shelf to basin transects, with transects ranging longitudinally from the western Chukchi Sea eastward to the eastern Beaufort Sea. The final transect is up Barrow Canyon southward towards Nome, although this transect will be dependent on the level of whaling still in progress. This is an interdisciplinary program, where physical, biogeochemical and biological measurements will be made. CTD/rosette sampling will collect physical and hydrochemical samples. Subsamples from four CTD/rosette casts will collect water for primary production, chlorophyll content, nutrients, particulate carbon, microzooplankton, radioisotopes and particulate matter. Various nets (vertical, bongo) will be used to collect size fractions of micro-macro-mesozooplankton for both population and experimental purposes. Benthic grabs and cores will be used to collect benthic fauna and sediment samples for population, community structure, foodweb and metabolism studies. Off-ship sampling by lowering personnel to the ice will occur to collect ice cores. Shipboard marine mammal surveys from the bridge will be undertaken by the USFWS. Limited helicopter operations will be used for ice reconnaissance, during which marine mammal imagery will be possible.

USCGC HEALY (WAGB 20) **CRUISE PLAN**

United States Coast Guard

Chief Scientist	**JM Grebmeier**	**Cruise**	**SBI I (spring 2002)- HLY-02-01**

The maximum number of science party personnel allowed per cruise is 35 (50 with surge berthing, i.e. 3 per room)	
39	Total Number of People in Your Party

If your cruise involves any of the following, please check (**X**) below. Items marked (*) require completion of additional forms.

X	Personnel Deployed on Ice	**X**	Radioactive Materials (*)
	Diving Operations	**X**	Hazardous Materials (*)
	Deployment or Recovery of Moorings	**X**	Multiple PI or Institution Cruise
X	Small boat Operations	**X**	Gasoline for Equipment
X	Helicopter Operations	**X**	On-board Pre-Cruise Equipment Storage

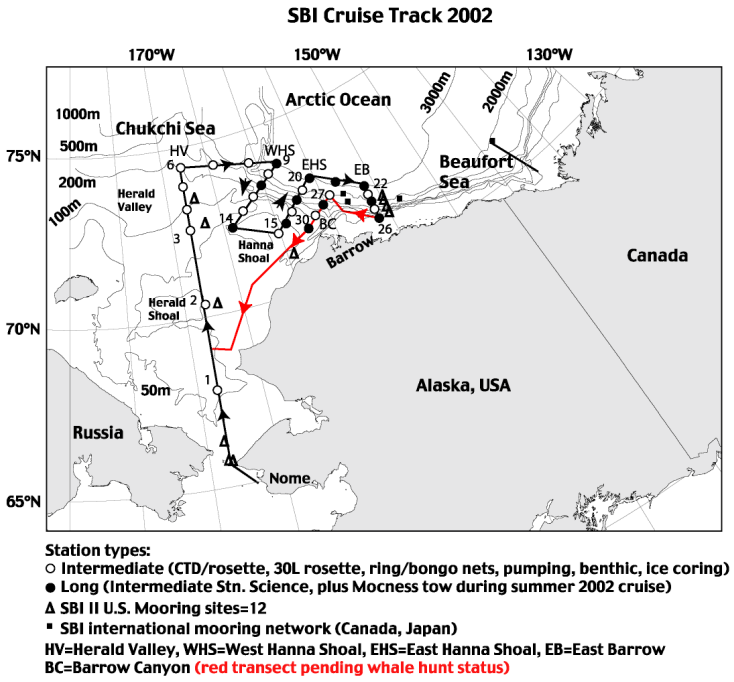
USCGC HEALY (WAGB 20) **CRUISE PLAN 2**

United States Coast Guard

Chief Scientist	JM Grebmeier	Cruise	SBI I (spring 2002)- HLY-02-01

Area of Operation: Cruise Tracks and Station Locations. Please provide as complete a description as possible. Include with this plan or separately a complete list of stations with ID#, Latitude and Longitude and other information such as type of sampling as appropriate. If science operations will be conducted within the Economic Exclusive Zone (EEZ, normally 200 miles) of a foreign country, list the country and the period of operation. Use additional pages or separate documents to provide this information. Use the section below to generally describe the area of operations.

1. The cruise will begin in Nome, Alaska and sail through Bering Strait to work at stations on the Chukchi Sea shelf, with the focus of the study on the outer shelf and slope regions of the Chukchi and Beaufort Seas. Figure 1 outlines the current cruise track, with station locations defined by station type.



Figuure 1. Cruise track for the SBI spring cruise in 2002.

Preliminary station locations are identified for the Chukchi shelf. However, the outer shelf and slope stations for the Chukchi and Beaufort seas, stations are being positioned by depth contours in the following sequence: 50, 100, 200, 500, 1000, 2000 and 3000 m depth counters. Latitude and longitude are still being determined as the cruise track is modified to reduce Native subsistence hunt concerns.

Chief Scientist	**JM Grebmeier**	**Cruise**	**SBI I (spring 2002)- HLY-02-01**

2. Way Point Values-Updated Spring Healy SBI cruise

May 7/8: depart Nome, AK
May 9: pass through Bering Strait
May 11: Stn 1 on Herald Valley line (HV), transit NW to the east of Herald Shoal
May 13: Stn 2, east of Herald Shoal
May 15: reach <100 m depth contour in western Chukchi Sea (Stn 3); transit NW on Herald Valley (HV) line (occupy Stns 4, 5, 6)
May 19: start slightly NE to deep Chukchi Sea/Canadian Basin site (Stns 7, 8)
May 21: arrive/complete outermost Chukchi/West Hanna Shoal (WHS) (Stn 9), then head SW on WHS transect (occupy Stns 10-14)
May 25: finish Stn. 14, head east to East Hanna Shoal (EHS) transect
May 26: start outbound EHS transect (Stns 15-19)
May 29: arrive outermost EHS stations (Stn 20), complete stn/start transect east to outermost station on East Barrow (EB) transect
May 31: arrive outermost EB transect (Stn 22)
June 1: start SE transect on EB line (Stn 23-26)
June 4: finish innermost station on EB transect (Stn 26)
June 5: transect from sta. 26 to outermost station on Barrow Canyon (BC) line (Stn 27)
June 7: occupy Stn 27 on BC line, head SW on BC line (Stns 28-30)
June 10: complete BC line, head SW towards Cape Lisburne
June 12: short jog westward from Cape Lisburne to HV line for flow-through system measurements only/modeling purposes, then start steam south on HV line
June 14: transit through Bering Strait
June 15: arrive Nome 0900

3. The sampling plans listed below for the SBI field program are based on the following parameters within the proposed sampling area (Figure 1):

- estimated 10 day transit time form Nome, Alaska to study area and return, inclusive of scientist change-out in Nome, Alaska
- 30 day process sampling in the operating area indicated by the transects over on the outer shelf and slope of the Chukchi and Beaufort seas (Figure 1)
- station depths from 50-3000 m, with core outer shelf-slope area being at 100-3000 m
- average station spacing of 10 nm in the intensive study area
- possible inclusion of brief single cast stations at 30 nm intervals on the transect from Bering Strait to core SBI sampling region
- estimated 4 stations/d (survey) or 2 stations/d (process), inclusive of between station transit times for each cruise
- average one hr station time (survey) or 12 hr station time (process)
- process, mooring and survey cruises include core hydrobiochemical measurements

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Category 1 projects include process-oriented research activities and service measurements, along with appropriate modeling, mooring, underway surveys, and remote sensing activities, to address the program objectives. These measurements include:

a. Biological Rate Measurements (PIs)

- New and regenerated primary production (Cota)
- Bacterial activity/production (Kirchman)
- Micro and macro-zooplankton grazing and reproduction (Sherr, Ashjian)
- Benthic faunal production (Grebmeier
- Sediment metabolism. (Grebmeier)

b. Biogeochemical and Physical Measurements

Additional biogeochemical and physical measurements for cruises include:

- Dissolved inorganic carbon (DIC) (Hansell/Bates)
- Chemical (e.g., oxygen-18) and radiochemical ocean tracers (Cooper, Dunton, Kadko, Moran)
- Phytoplankton species composition and HPLC pigments (Cota, Grebmeier)
- Particulate organic carbon (POC), particulate organic nitrogen (PON), dissolved organic carbon (DOC), and dissolved organic nitrogen (DON) (Hansell/Bates, Moran, Cooper)
- Bacterial biomass (Kirchman)
- Heterotrophic protist biomass (Sherrs)
- Micro-and macro-zooplankton biomass (Ashjian)
- Benthic macrofaunal biomass (Grebmeier)
- Eddy formation and slope boundary transport (Swift-service, Kadko).

Category 2 projects address the acquisition of a consistent suite of data from the SBI cruises. The core shipboard measurements will be standard for every cruise and will be made available in draft form to PIs at the end of each cruise. Basic data collection will include CTD measurements, in-situ fluorescence and transmissivity, photosynthetic active radiation (PAR), and a rosette for discrete water sampling and determination of inorganic nutrients (nitrate, phosphate, silica, ammonia), chlorophyll-a, bottle salinity determinatiions, and dissolved oxygen measurements. Underway temperature, salinity, and meteorological data, along with ADCP measurements, will be made (Swift, Codispoti, and Flagg).

Chief Scientist	**JM Grebmeier**	**Cruise**	**SBI I (spring 2002)- HLY-02-01**

Table 1. Station locations for SBI cruises

Leg	**Station No. (historic name)**	**Station Name**	**Latitude (°N)**	**Longitude (°W)**	**Depth (m)**
HV	1 (UTN4)	HV1	67 30.06	168 54.80	51
HV	2 (CSH1)	HV2			40
HV	3 (CSL1)	HV3			80
HV	4 (CSL2)	HV4			100
HV	5	HV5			150
HV	6	HV6			200
HV-WHS	7	HV-WHS1			500
HC-WHS	8	HV-WHS2			1000
WHS	9	WHS6			3000
WHS	10	WHS5			2000
WHS	11	WHS4			1000
WHS	12	WHS3			200
WHS	13	WHS2			80
WHS	14	WHS1			40
EHS	15	EHS1			40
EHS	16	EHS2			50
EHS	17	EHS3			100
EHS	18	EHS4			500
EHS	19	EHS5			2000
EHS	20	EHS6			3000
BC5	21	BC5			3000
EB	22	EB5			3000
EB	23	EB4			2000
EB	24	EB3			1000
EB	25	EB2			200
EB	26	EB1			100
BC	27	BC4			2000
EB	28	BC3			500
EB	29	BC2			200
EB	30	BC1			100

Chief Scientist	**JM Grebmeier**	**Cruise Dates**	**SBI I (spring 2002)- HLY-02-01**

Table 2. Mooring locations for SBI cruises and for international programs. SBI Chukchi/Beaufort moorings in July 2002. Ship needs to stay 5 nm away from mooring coordinates.

Mooring PI (country)	**Location**	**Mooring Name**	**Latitude (°N)**	**Longitude (°W)**	**Depth (m)**
USA-SBI					
Woodgate (UW)	Bering Strait	BSM1	65 46.7	168 34.8	
Woodgate (UW)	Bering Strait	BSM2	66 19.6	168 58.0	
Woodgate (UW)	Bering Strait	BSM3	65 44.4	168 16.2	
Weingartner (UAF)	Chukchi Shelf	CSH1			
Weingartner (UAF)	Chukchi Slope	CSL1			
Weingartner (UAF)	Chukchi Slope	CSL2			
Weingartner (UAF)	Chukchi Slope	CSL3			
Weingartner (UAF)	Barrow Canyon	BC1			
Pickart (WHOI)	East Barrow	EBS1			
Pickart (WHOI)	East Barrow	EBS2			
Pickart (WHOI)	East Barrow	EBS3			
Pickart (WHOI)	East Barrow	EBS4			
Pickart (WHOI)	East Barrow	EBS5			
Pickart (WHOI)	East Barrow				
Int. SBI Moorings					
JAMSTEC/Japan	L Barrow Canyon	BC-E-01			
JAMSTEC/Japan	L Barrow Canyon	BC-C-01			
JAMSTEC/Japan	L Barrow Canyon	BC-W-01			
JAMSTEC/Japan	E Barrow/slope	BF-K-98			
JAMSTEC (in the water-drag in 2002	E Barrow/slope	NS-J-01	71 13.34	148 59.39	508
JAMSTEC/Japan	E Barrow/N slope	BF-S-98	70 56.86	146 36.87	**Out 02**
Shimada/Carmack (JWACS)	E. Barrow				

Chief Scientist	**JM Grebmeier**	**Cruise Dates**	**SBI I (spring 2002)- HLY-02-01**

A. Standard, non-productivity station; intermediate station, ex. 100m (additional time for deeper station deployments; see Attachment 1: SBIA1stntime.xls; Attachment 2:SBIA2PIproj.xls; SBIA3Watercol.xls; SBIA4Typeofcasts.doc; SBIA5Zooplankton.xls; SBIA6Benthic.xls; SBI7offship.doc)

Order of Sampling:

1-CTD # 1: service, plus others	1.5 hr.	[Coincident – ice people overside 1 hr.]
2- Stern vertical zoop tow (2)	0.5 hr	
3-CTD #2 Harvey/Benner	1 hr	
4-CTD #3/4 Kadko	1.5 hr	
5-Moran water pump (20 stn total)	2-4 hr	
5-Benthic - van Veen grabs (5)	1.5 hr	
6-Haps corer (3)	1 hr	
7-box corer	1 hr	
Total time	**12 hrs.**	

B. Standard Productivity Station (8-9 am daily); intermediate station, ex. 100m

Cota sampling goes in station line up w/water collections if intermediate/long station, flow into one of the CTD's 8 – 9 am window, then add 1.5hr; also add 1 hr. at this station 3x per week for Sherr microzooplankton sampling**.** For productivity measurements, Cota needs to collect water over the euphotic zone (20-80m) in early AM local time; just before/after breakfast normally works well w ship's schedule and most other things like AM optics following soon after that. Incubations start in early AM before the rapid increase of solar radiation (NB. two orders of magnitude fluctuation even in continuous daylight w 8-15uE/m2/s to 800-1500uE/m2/s for midnight and noon). Short-term (~6 h) and long-term (~24h) incubations then span local solar noon (~13:30). This is critical for reliable and consistent biological rates. If we started incubations any time, especially late in a day, the phytoplankton cells would have little or no hot (14C) carbon fixed to respire (i.e labelled fuel to burn) at "night". Daily rates would be all over the place. We see 1.5 to 2.0X difference in hourly rates between long and short(greater)-term incubations. Its even more acute at lower lats. Cota plans to do daily production experiments ts pretty much where ever we are even if it's the same as yesterday AM. The optimal would be to have ~1/3 each for shelf, slope, and basin. Depending upon when we arrive at any given station we need to remain somewhat flexible as to when we do several things.

C. Long Station=Intermediate station in spring; in summer, longer stations composed of standard non-productivity and productivity stations, plus MocNess tows, off-site sediment chamber work, but no coincident ice work.

D. Standard Station Time (Intermediate/Long; plus additional time/day by seasonal cruise)

Spring	**Summer**	
=IntermediateLong w/wo prod. Stn, plus		
w/Glenn et al. daily optics	+1.5hr	+1.5 hr
Vertical/bongo nets	+2 hr	+2 hr
Mocness (summer only)	+0 hr	+2-5 hr (12 stn total)

Water sampling variance: 5nm +/- 25% depth interval

Sediment sampling variance: 0.5-5 nm (depending on depth)

E. Event Sampling

Requires real time hydrography, observe eddy transport processes (15-20 km), fronts, suggest CTD casts; what triggers features sampling?; issue: need underway seawater sampling; How identify: shelf break features, eddies, true physical contact.Tentative plan: If see feature, either XCTD deployment or possible 2 – 4 d sampling, maybe < 1 d; all water column people. (make decision real-time at sea); Kadko lead on requesting XCTD's; TBD: short station (CTD only), no water, tighter sample spacing

F. See Attachment SBIA2Piproj.xls for individual PI project specifics

USCGC HEALY (WAGB 20) SCIENTIFIC CREW LIST 3

United States Coast Guard

Please list all scientific personnel sailing on your cruise. If you do not know the names of some of the participants list them as TBD (To Be Determined) and notify HEALY via e-mail when they are determined. The maximum number of persons in the scientific party is 35 (50 with surge berthing, i.e. 3 per room). Indicate under position, if the person is a Scientist, Technician, Graduate Student, Undergraduate, or Observer. Indicate foreign nationals and nationalities. Please indicate if anyone has special dietary needs. If the person will only be on board for part of the trip show the dates on board in the dates column. Use additional sheets if required. For other than day trips have each person complete the Personnel Information Form (1B).

	Name	Institution	Position	Sex	Dates On Board
1	Jackie Grebmeier	U Tennessee	Chief Scientist	F	5 May-15 June 02
2	Lee Cooper	U Tennessee	Co-Chief Scie.	M	5 May-15 June 02
3	James Bartlett	U Tennessee	Technician	M	5 May-15 June 02
4	Jackie Clement	U Tennessee	Technician	F	5 May-15 June 02
5	Cota, Glenn	ODU	Scientist	M	5 May-15 June 02
6	Ruble, David	ODU	Technician	M	5 May-15 June 02
7	Pan, Xiaju	ODU	Technician	M	5 May-15 June 02
8	Mei, Zhi-Ping	ODU	Technician	M	5 May-15 June 02
9a	Roberts, Steve	JOSS	Techician	M	27 April-5 May
9b	Stossmeister, Greg	JOSS	Technician	M	5 May-15 June 02
10	Schonberg, Susan	U Texas Austin	Technician	F	5 May-15 June 02
11	Tapp, James	U Alaska Fairbanks	Graduate Student	M	5 May-15 June 02
12	Eicken, Hajo	U Alaska Fairbanks	Scientist	M	5 May-15 June 02
13	Gradinger, Rolf	U Alaska Fairbanks	Scientist	M	5 May-15 June 02
14	Farmer, Charlie	U of Miami	Technician	M	5 May-15 June 02
15	Uchiyama, Tadayasu	U of Miami	Technician	M	5 May-15 June 02
16	Benner, Ron	U of Maryland	Scientist	M	5 May-15 June 02
17	Harvey, Rodger	U of Maryland	Scientist	M	5 May-15 June 02
18	Kadko, David	U of Miami	Scientist	M	5 May-15 June 02
19	Stephens, Mark	U of Miamia	Technician	M	5 May-15 June 02
20	Kirchman, David	U of Delaware	Scientist	M	5 May-15 June 02
21	Preen, Katie	U of Delaware	Graduate Student	F	5 May-15 June 02
22	Kelly, Roger	U of Rhode Island	Technician	M	5 May-15 June 02
23	Nelson, Rick	Canada	Technician	M	5 May-15 June 02
24	Campbell, Robert	WHOI	Scientist	M	5 May-15 June 02
25	Crain, Jennifer	Oregon St. Univ.	Technician	F	5 May-15 June 02
26	Plourde, Stephane	Canada	Technician	M	5 May-15 June 02
27	Fritz, Cara	Oregon St. Univ.	Technician	F	5 May-15 June 02
28	Codispoti, Louis	U of Maryland	Scientist	M	5 May-15 June 02
29	Williams, Bob	Scripps	Technician	M	5 May-15 June 02
30	Masten, Doug	Scripps	Technician	M	5 May-15 June 02
31	Haberkern, Erik	U of Maryland	Technician	M	5 May-15 June 02
32	Sanborn, Kristin	Scripps	Technician	F	5 May-15 June 02
33	Palomares, Robert	Scripps	Technician	M	5 May-15 June 02
34	Stockwell, Dean	UAF	Scientist	M	5 May-15 June 02
35	Flagg, Charles	LDEO	Scientist	M	5 May-15 June 02
36	Roth, Lori	U Maryland	Grad. Student	F	5 May-15 June 02
37	Webber, Marc	USFWS	Scientist	M	5 May-15 June 02
38	TBD	EWC	Observer		5 May-15 June 02
39	TBD	AEWC	Observer		5 May-15 June 02

USCGC HEALY (WAGB 20) CRUISE PLAN DECK CONFIGURATION

4

United States Coast Guard

Please check (X) by equipment needed. Four cables can be made ready for rigging at any one time, and two others will be on spare drums. If you have questions, or need assistance, please call or email MSTCS Hendrickson or LTJG Woodrum at 206-217-630 or email: ghendrickson@healy.uscg.mil or mwoodrum@healy.uscg.mil

Cables		Instrument	Instrument Wt.(s)	Max Depth Planned	Aft or STBD Usage
X	.322"conducting cable (12k meters)	Starboard-CTD operations		3000m	STBD
X	3/8" steel cable (10k meters)	Aft-zooplankton and benthic operations; water pumping	100 lb	200 m	AFT
	.680 coax conducting cable (12k meters)				
X	9/16" steel cable (14k meters)	Benthic large multi-corer, box corer	600-1000 lbs	3000 m	AFT
	¼" steel cable (14k meters)				
	Spare .322 conducting cable (12k meters on spare drum)				
	User supplied winch and cable (describe use, size, and weight & power requirements below)				

Do you require slip rings? Uncertain.
Number of Conductors: **1**
Do you need non-standard cable?
If so what type: **request 1/4 in. winch and cable on starboard deck: optics deployment**

SEE ATTACHMENT SBI7USCGwire.xls FOR MORE DETAILS

	Other Deck Equipment	**Equip. will be used for:**	
X	Port Side Fantail Crane (Safe Working Load: 5 tons)	Deployment large benthic gear	
	Starboard Side Fantail Crane (Safe Working Load: 15 tons)		
	04 Deck Cranes (Safe Working Load: 15 tons)		
	Forecastle Crane (Safe Working Load: 3 tons)		

Describe needs here:
Fantail cranes used for deck movement of benthic gear for stern deployment

	Other needs for Deck Space	**Size/Use/Location/Power/Water Requirements**
X	Van: optics van in stern	Stern/water optics/Cota info
X	Van: chemical (rad) van on bow	Bow/water rads/Cota info
X	Van: refrigerated van on bow for cooling intake water to ambient temperatures for deck incubators	Bow/tropic incubations/Cota info
X	Van: for Brad Moran work, stern	02 deck: water rads/Moran info
	Moorings	
X	Incubators: 7 deck incubators on bow, with refrigerated van	Bow: process studies/Cota lead/info
	Storage	

X	Other (Describe below)	Aft, port-side railing for mud shunt

Elaboration on any of the above needs

OTHER:

Refrigerated van and chemical (rad) van on bow deck (n=2)

Cota optics van on aft deck, starboard outboard; this van to be offloaded in Nome by barge after HLY-02-03 (SBI summer cruise)

Moran rad van placed on 02 deck

Keigwin van (storage) aft deck, port side

aft/port-side railing: benthic mud shunt for sieving operations (Grebmeier)

USCGC HEALY (WAGB 20) SCIENCE EQUIPMENT AND LAB CONFIGURATION 5

United States Coast Guard

Chief Scientist	Dr. Jackie Grebmeier	Cruise Dates	6 May-15 June 2002 (HLY-02-01)

Please check (X) equipment needed!

CTD (Note: HEALY is designed to keep station in open water with a 20 knt winds, 45°s off the bow. Ice conditions often prohibit station keeping abilities.)			
	SeaBird 911 + CTD/Rosette **[NOTE THAT SWIFT ET AL. BRINGING OWN GEAR]**	3000 m	Deepest Depth Planned (m)
	Redundant Temperature Sensors		Redundant Conductivity Sensors
	O_2 Sensor		Sea-Tech Transmissometer
	12 Liter external spring bottles	**X**	Chelsea Fluorometer
	30 Liter external spring bottles		Altimeter
ADCP (Note: Science Party supplies Operator)			
	RDI 150 kHz VM-ADCP	**X**	75 kHz-ADCP
X	VMDAS (Data Acquisition Software)	**X**	Transect (Data Acquisition Software)
XBT			
X	Sippican XBT	**X**	User supplies probes
Data Acquisition System (SCS)			
X	Science Network with NOAA SCS Software		External Navigation Output (NMEA)
	Turner 10AU Fluorometer		SeaBird 25 Thermosalinograph
Bathymetery			
X	Knudsen 320B/R Echosounder Ocean Data BATHY2000 Echosounders		SEABEAM 2112 Bottom Mapping Sonar (Science Party supplies operator)
	12 kHz		EPC 9802 20” Line Scan Recorder
	3.5 kHz		
Lab Equipment			
X	DI Water (1 Mega Ohm) indicate liters/day **Need 4000 L over length 40 d cruise**	**X**	(2) -70° C freezers
X	Fume Hood	**X**	(2) Climate Control Chambers
X	Sea water in Lab (indicate flow rate needed) **Normal sink-type flow**	**X**	Sea water on deck
X	Walk in Freezer	**X**	Clean/UPS Power (120v, 60Hz, Type 1)
X	Walk in Refrigerator		
Miscellaneous			
X	RM Young Wind Sensors (Mech/Ultrasonic)	**X**	Email/Fax
X	12 kHz pinger (Benthos/Datasonics)	**X**	Uncontaminated Seawater
	RM Young Air Sensors(Temp, Baro, RH etc)	**X**	Terascan Weather Satellite System
X	Iridium Phone	**X**	Inmarsat Phone
X	Copy Machine		Chart Printer
X	Data/FTP		
Coring			
	Jumbo Piston Coring		Gravity Core
	Other Geological (explain)		Rock Dredge

USCGC HEALY (WAGB 20) SCIENCE EQUIPMENT AND LAB CONFIG 5a

United States Coast Guard

Please describe your equipment and lab set up needs below. Please include any special requirements for setting up any of the equipment marked above. Also describe special needs for electrical connections, fresh or salt water usage or air. Also describe any plans to mount equipment to the vessel or for the deployment of equipment you will be bringing. Use extra pages as necessary and if you have questions about any of the equipment above or equipment not listed please contact MSTCS Glen Hendrickson ghendrickson@healy.uscg.mil or LTJG Michael Woodrum mwoodrum@healy.uscg.mil or call 206-217-6300.

1. See Attachments 8 (01LabSpaces.pdf) and 9 (MainLabSpaces.pdf) files labeled for PI lab usage
2. PI Cota has lead on deck incubator system
3. PI Smith (Lane) has lead on flow-through seawater system
4. PI Swift will bring own CTD/rosette bottle; responsible for deployment, USCG winch operators assist
5. PIs Cota, Dunton, Grebmeier, Hansell/Bates, Kadko, Kirchman, Ashjian/Sherr, Swift/Codispoti subsample from multiple CTD casts; water column group responsible for sample collections
6. PI Cota lead for optic gear deployment
7. PIs Gradinger and Eicken: offship ice coring, discuss equipment with MSTs
8. PI Kadko deploying XCTDs
9. PI Moran lead for seawater pumping operations
10. PIs Ashjian/Sherr zooplankton gear deployment: group will discuss deployment with MSTs; deployment (stern) alternate with CTD deployment (starboard)
11. PIs Grebmeier/Cooper benthic gear deployment: will discuss deployment with MSTs; also MSTs to build plywood shunt via USCGC Polar Star plans for shunting mud from grabs overboard after sieving (aft, port side)
12. Marc Webber (USFWS) lead for bridge marine mammal and seabird observations; opportunistic use of helos with ice flights for imagery studies
13. Hood Use: a. biochem lab (Sherr's), wet lab (Benner, Harvey), Main lab: general use)Ashjian, Grebmeier, Smith); originally Brad Moran needed hood for his muffle furnace [resolved by placing it in aft lab and venting to outside]; Dave Kirchman use photo lab space/w venting